WE CLAIM:

1. An in-vivo tissue inspection device comprising:

an first non-imaging light collector having an entrance and an exit;

a second non-imaging light collector having an entrance and an exit, the second non-imaging light collector being arranged so that its entrance is in light communication with the exit of the first non-imaging light collector;

a light guide; and

an optical element, wherein the light guide is positioned between the second non-imaging light collector and the optical element.

2. The in-vivo tissue inspection device of claim 1, wherein the first non-imaging light collector and the second non-imaging light collector are each independently selected from the group consisting of a compound parabolic collector and a compound elliptical collector.

3. The in-vivo tissue inspection device of claim 1, wherein the first non-imaging light collector and the second non-imaging light collector are each independently selected from the group consisting of a filled non-imaging light collector and an unfilled non-imaging light collector.

4. The in-vivo tissue inspection device of claim 1, wherein the first non-imaging light collector has an axial ratio of about 3:1.

5. The in-vivo tissue inspection device of claim 1, wherein the first non-imaging light collector has an area ratio that is about 3:1 to about 5:1.

6. The in-vivo tissue inspection device of claim 1, wherein the second non-imaging light collector has an axial ratio that is about 5:1 to about 10:1.

7. The in-vivo tissue inspection device of claim 1, wherein the second non-imaging light collector has an area ratio of about 2:1.

8. The in-vivo tissue inspection device of claim 1, wherein the entrance of the first non-imaging light collector is sized in accordance with a particular tissue to be examined in-vivo.

9. The in-vivo tissue inspection device of claim 8, wherein the particular tissue to be examined comprises cervical tissue.

10. The in-vivo tissue inspection device of claim 8, wherein the cervical tissue to be sampled is one or more of endo-cervical tissue and ecto-cervical tissue.

11. The in-vivo tissue inspection device of claim 1, wherein the light guide is one of a free space connection, a hollow core light guide, or an optical fiber.

12. The in-vivo tissue inspection device of claim 1, wherein the optical element is one of a diffractive optical element and a holographic optical element.

13. An in-vivo cervical tissue inspection system, the system comprising:
a light source;
a light detector; and
the in-vivo tissue inspection device of claim 1.

14. The in-vivo tissue inspection system of claim 13, wherein the light source comprises a solid state laser diode.

15. The in-vivo tissue inspection system of claim 14, wherein the solid state laser diode emits at a wavelength that is at least one of about 635 nanometers and about 850 nanometers.

16. The in-vivo tissue inspection system of claim 13, wherein the light detector comprises a blue enhanced silicon photodiode or an avalanche diode, the light detector suitable to detect fluorescence emissions at wavelengths of about 660 nanometers and about 690 nanometers.

17. The in-vivo tissue inspection system of claim 16, further comprising a light detector comprising a gallium arsenide photodiode, the photodiode suitable to detect reflectance from a cervix at a wavelength of about 850 nanometers.

18. The in-vivo tissue inspection system of claim 13, further comprising a plurality of light sources and a plurality of light detectors.

19. The in-vivo tissue inspection system of claim 13, wherein the light detector comprises an imaging array detector.

20. The in-vivo tissue inspection system of claim 13, further comprising a source of an exogenous reagent to enhance cellular fluorescence.

21. The in-vivo tissue inspection system of claim 13, further comprising an external housing comprising a sampling element.

22. The in-vivo tissue inspection system of claim 21, wherein the sampling element comprises a biopsy apparatus that can be manipulated to exfoliate and collect cervical cells.

23. A method of inspecting cervical tissue for abnormalities, the method comprising steps of:

contacting the cervical tissue with an exogenous fluorescent reagent that is preferentially taken up by abnormal cells;

subsequently contacting the cervical tissue with light of a first wavelength; and

detecting and measuring fluorescent light of a second wavelength;

wherein the light of a first wavelength and the fluorescent light of a second wavelength are both transmitted in a non spatially-resolved manner.

24. The method of inspecting cervical tissue of claim 23, wherein the step of contacting the cervical tissue with an exogenous fluorescent reagent comprises application with one of a tampon, a sponge, a wipe or a brush.

25. The method of inspecting cervical tissue of claim 23, wherein the step of contacting the cervical tissue with an exogenous fluorescent reagent comprises application via one of aspiration and spraying.

26. The method of inspecting cervical tissue of claim 24, wherein the step of transmitting the light of a first wavelength and the fluorescent light of a second wavelength in a non-spatially resolved manner comprises transmitting the light of a first wavelength and the fluorescent light of a second wavelength through a non-imaging optical device.

27. The method of inspecting cervical tissue of claim 23, wherein the step of contacting the cervical tissue with the light of a first wave further comprises contacting the cervical tissue with light of a plurality of distinct wavelengths.

28. The method of inspecting cervical tissue of claim 27, further comprising a step of measuring reflectance of light of a particular wavelength selected from the plurality of distinct wavelengths.

29. The method of inspecting cervical tissue of claim 23, wherein the exogenous fluorescent reagent is selected from the group consisting of a photodynamic therapy reagent, an immuno-histochemical reagent, and a molecular probe.

30. A cervical screening method for screening cervical tissue, the method comprising steps of:

applying an exogenous reagent to the cervical tissue, the exogenous reagent configured to cause abnormal cells to provide a discernable response to incident light;

contacting the cervical tissue with an incident light sufficient to cause the discernable response to the incident light, the discernable response comprising emitted light of a particular wavelength;

using a non-imaging light collector to gather and concentrate the emitted light; and

impinging a detector with the gathered and concentrated light.

31. The cervical screening method of claim 30, wherein the step of using a non-imaging light collector comprises using at least one compound parabolic collector.

32. The cervical screening method of claim 30, wherein the step of using a non-imaging light collector comprises using at least one compound elliptical collector.

33. The cervical screening method of claim 30, wherein the step of impinging a detector comprises using an optical element comprising a diffractive optical element in order to polarize the gathered and concentrated light.

34. The cervical screening method of claim 30, wherein the step of contacting the cervical tissue comprises passing the incident light through a non-imaging collector.

35. The cervical screening method of claim 30, wherein a filled non-imaging collector is used to screen cervical tissue comprising endo-cervical tissue.

36. The cervical screening method of claim 30, further comprising a step of obtaining a sample of the cervical tissue in response to an indication of abnormality.